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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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September 25, 1989

Mr. Roger Freeberg  
Hanford Project Manager  
U.S. Department of Energy  
P.O. Box 550  
Richland, Washington 99352



Dear Mr. Freeberg:

The following is in response to Mr. Izatt and Mr. Chikalla's July 8, 1989 letter and accompanying report concerning the "STRATEGY AND SCHEDULE FOR TREATMENT OF SIMULATED HIGH-LEVEL SLURRY."

Your report describes the treatment and proposed redesignation of simulated high-level slurry (also referred to as excess process chemicals). This waste includes two different materials, identified as PWO and PW7A for their distinct chemical compositions. Approximately 11,000 gallons of these hazardous wastes were neutralized and grouted inside 55-gallon drums at the 1234 laydown yard between September 14 and October 28, 1988. All 306 drums remain in the 1234 laydown yard pending designation of the treated waste in accordance with the state dangerous waste regulations, chapter 173-303 WAC.

The simulated high-level slurry was originally designated as EP Toxic (for barium, cadmium, chromium, and silver), corrosive (for pH <2), and ignitable (for high nitrate content and low pH). We note that, based on data in Table 1 of your report ("Compositions of PWO and PW7A as Procured"), the original PWO slurry was not adequately designated. PWO waste should also have been designated EHW for toxicity under dangerous waste mixtures, section 173-303-084 WAC. To designate the grouted simulated high-level slurry a non-hazardous waste, the material must first be checked and/or tested against all lists, characteristics, and criteria in accordance with 173-303-070 WAC.

Your report presents the results of waste designation testing for the grouted waste; these results may be summarized as follows:

- o No listed wastes were introduced into the slurry before or during treatment.
- o The pH of the slurry was raised by the addition of concentrated NaOH so that the final pH of the grouted waste is between 11.3 and 11.6 - below the designation limit.
- o The grouted waste passes the EP toxicity test. Reported concentrations of all regulated metals in the leachate are below designation limits.

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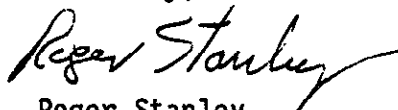
- o The grouted waste passes the static acute fish toxicity test. Treated PWO waste is not toxic to the fathead minnow at concentrations up to 1000 mg/l. We note that the bioassay test was not performed on a sample of PW7A waste. However, based on knowledge of PW7A waste composition, it is expected to be less toxic than the PWO waste.

Based on a review of these results, Ecology staff have determined the following:

1. Grouted PW7A waste is not regulated as dangerous waste, and is suitable for disposal at the Hanford central landfill.
2. Grouted PWO waste will continue to be regulated as a dangerous waste until additional waste designation data demonstrates that the material no longer exhibits the criteria of toxicity. Information contained in your report indicates that the original PWO waste should have been designated EHW under section 173-303-084 WAC for toxicity. A review of RTECS (Registry of Toxic Effects of Chemical Substances) shows that many of the constituents in untreated PWO waste are toxic to rats and other mammals. Based on this new information, grouted PWO waste will not be considered appropriate for redesignation as non-hazardous until it has passed both the static acute fish toxicity test (done), and the acute oral rat toxicity test specified in 173-303-110(3)(b)(ii) WAC. Ecology has determined this level of designation to be warranted due to the high toxicity of the original material, and the complex composition of the grouted waste.

Please extend my thanks to appropriate staff for the level of detail within the simulated high-level slurry report, and for the open cooperation we received while reviewing this issue. Follow up technical inquiries may be directed to Mike Gordon of my staff at (206)438-7024.

Sincerely,



Roger Stanley  
Hanford Project Manager

cc: Paul Day (EPA)  
T.D. Chikalla (PNL)

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